



C A L I F O R N I A E N E R G Y C O M M I S S I O N

Electric Program Investment Charge

First Triennial Investment Plan

October 31, 2012

Energy Research and Development Division
Efficiency and Renewable Energy Division



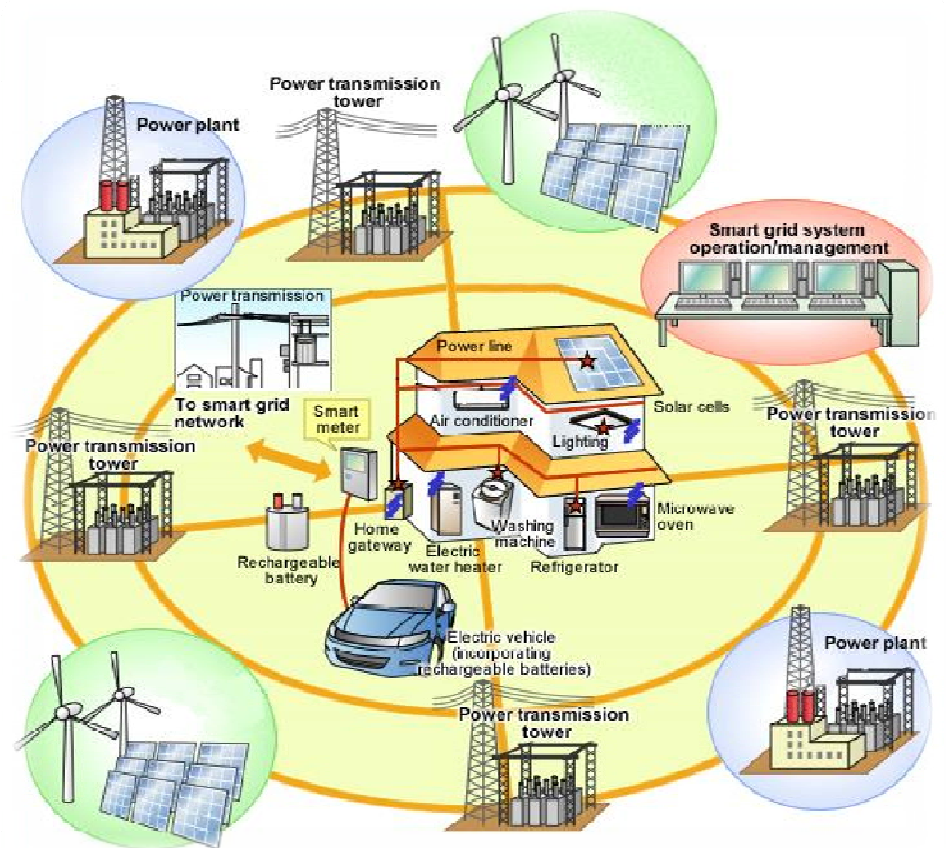
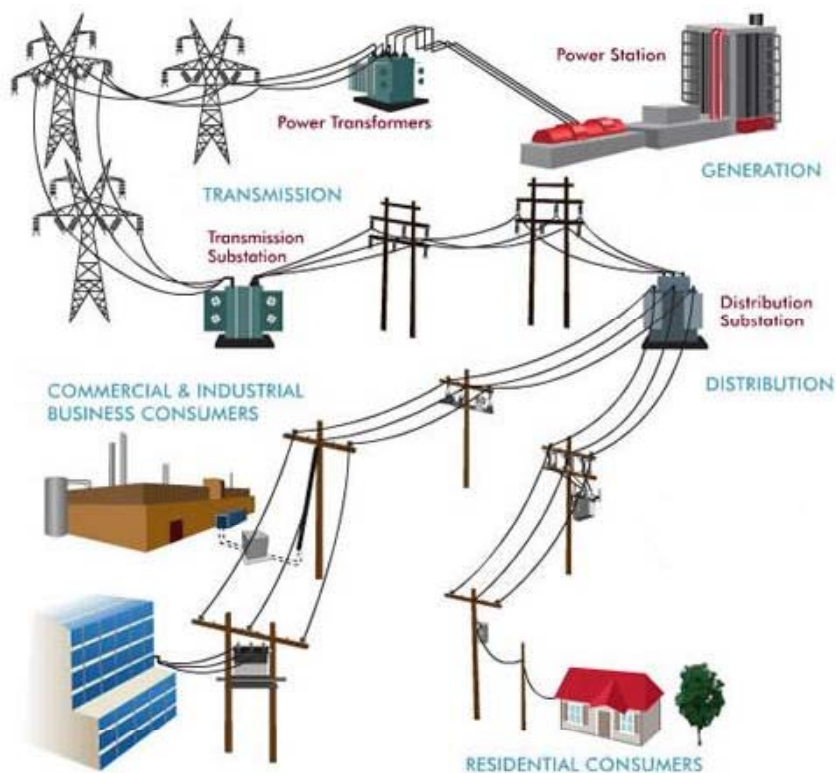
Schedule for Investment Plan Development and Approval

Activity	First Triennial Investment Plan (covering 2012-2014)
✓ Northern CA scoping workshops	August 2-3, 2012
✓ Southern CA scoping workshops	August 9-10, 2012
✓ CEC posts draft investment plan	September 21, 2012
✓ CEC workshop on draft investment plan	September 27, 2012
✓ CEC posts proposed investment plan	October 23, 2012
➡ CEC considers adopting investment plan at business meeting	October 31, 2012
Submit investment plan to CPUC	November 1, 2012
CPUC proceeding	Dec. 2012 – April 2013
CPUC Decision adopting or modifying Investment Plans	May 2013



CALIFORNIA ENERGY COMMISSION

EPIC Fosters Technologies and Strategies that Advance the Electric System to Benefit IOU Ratepayers





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CPUC EPIC Phase 2 Decision Budget

ENERGY INNOVATION PIPELINE

APPLIED RESEARCH AND DEVELOPMENT

CEC - \$55 million/year

Pre-commercial
development
Lab-scale demonstration
Pilot-scale demonstration

TECHNOLOGY DEMONSTRATION AND DEPLOYMENT

CEC - \$45 million/year
IOUs - \$30 million/year

Pre-commercial
demonstration
Pre-commercial deployment

MARKET FACILITATION

CEC - \$15 million/year

Regulatory assistance
Workforce development
Program tracking
Market analysis

CEC EPIC Mission

The Energy Commission through EPIC will fill critical funding gaps within the energy innovation pipeline to advance technologies, tools, and strategies that provide California's IOU ratepayers with clean, affordable, and reliable electricity and help enable the 21st century power grid.



EPIC Administrators Agree to Cooperation & Collaboration Principles on EPIC Programs

- Information sharing.
- Leveraging funding and avoiding duplication of projects.
- Consistent evaluation, measurement and verification of research, development, demonstration, and deployment results.
- Coordinated input and advice from stakeholders.
- Best efforts to agree on approaches for intellectual property to facilitate sharing of EPIC results for the benefit of electric utility ratepayers.



Effective Program Administration

- IOU ratepayer benefit assessment built into all phases of program administration.
- Detailed and transparent competitive solicitation process and selection criteria
 - ✓ Select the most promising technology solutions.
 - ✓ Limit admin. costs through solicitation selection criteria.
 - ✓ Maximize in-state investments through selection criteria.
- Federal match set aside to leverage EPIC funds.
- Coordinate with other RDD&D efforts to avoid duplication.
- Effective project management.
- Share results through technology forums and web portal.



Project Eligibility Criteria

	Applied Research and Development	Technology Demonstration and Deployment	Market Facilitation
3-Year Program Area Funding	Up to \$158.7 million	Up to \$129.8 million (\$27 million for bioenergy)	\$43.3 million
Estimated Min./Max. Award per Recipient	\$250,000 to \$3 million	\$1 million to \$5 million (\$100,000 to \$5 million for bioenergy projects)	\$25,000 to \$3 million
Match Funding Requirement*	None	20 percent of the requested EPIC funds	None
Estimated Funding to Match Federal Program Investments	Up to 10% to support federal cost share opportunities	Up to 10% to support federal cost share opportunities	None

* Applicants providing match funds beyond the minimum requirements will receive higher scores during the proposal evaluation.



Summary of Major Changes from Staff Draft Investment Plan

- Added vision for 2020 electricity system & beyond.
- Added framework for selection of proposed initiatives.
- Added details on administration and competitive process.
- Dropped/consolidated initiatives.
- Added initiatives.



Errata

- Clarify text of proposed investment plan, including the following points:
 - Proposed initiatives represent the full scope of possible awards, but the Energy Commission may not issue solicitations or make awards in every initiative area.
 - Proposed initiatives are not listed in order of importance.
 - Clarified scope of objectives and initiatives.
- Summarize comments and staff responses received after publication of the October 23, 2012 staff final report.
- Correct inconsistencies, grammatical errors, and typographical errors.
- Available at entrance to Hearing Room A. Also, available online at www.energy.ca.gov/research/epic/documents/.



Proposed CEC EPIC Budget (Million\$)

Funding Element	2012	2013	2014	Total
Applied Research and Development	48.7	55.0	55.0	158.7
Technology Demonstration and Deployment	39.8	45.0	45.0	129.8
Market Facilitation	13.3	15.0	15.0	43.3
Program Administration	11.3	12.8	12.8	36.9
Sub Total	113.1	127.8	127.8	368.7
New Solar Homes Partnership. Up to 10% (\$2.5 million per year) may be used for administration of the NSHP.	0.0	25.0	25.0	50.0
Grand Total	113.1	152.8	152.8	418.7



Proposed Funding Initiatives for the Investment Plan

- Investment plan presents a range of potential project funding initiatives.
- Proposed funding initiatives incorporate:
 - CPUC EPIC Phase 2 decision program areas and ratepayer benefits.
 - Guiding principles and policies.
 - Electricity value chain.
- The proposed funding initiatives are based on:
 - Stakeholder comments received.
 - Current knowledge of state-of-the-art technologies.
 - Known barriers and gaps.
 - Key factors driving clean energy development.



Applied Research and Development

Proposed Three-Year CEC EPIC Budget Plan (2012 - 2014):

Funding Area	Amount (Millions)
Energy efficiency and demand response (S1, S2)	\$64.7
Clean generation (S3, S4, S5)	\$44.0
Smart grid enabling clean energy (S6, S7, S8, S9)	\$23.0
Innovation clusters (S10)	\$27.0
Cost share for federal awards (S11)	Up to 10%
Applied Research and Development Program Area Total	\$158.7



Applied Research and Development

Energy Efficiency and Demand Response

- S1. Develop next-generation end-use energy efficiency technologies and strategies for the building sector.
- S2. Develop new technologies and applications that enable cost-beneficial customer-side-of-the-meter energy choices.

Clean Generation

- S3. Develop innovative technologies, tools, and strategies to make distributed generation systems more affordable.
- S4. Develop emerging utility-scale renewable energy generation technologies and strategies to improve power plant performance, reduce costs, and expand the resource base.
- S5. Reduce the environmental and public health impacts of electricity generation and make the electricity system less vulnerable to climate impacts.



Applied Research and Development

Smart Grid Enabling Clean Energy

- S6. Develop technologies, tools, and strategies to enable the smart grid of 2020.
- S7. Develop operational tools, models, and simulations to improve grid resource planning.
- S8. Integrate grid-level energy storage technologies and determine the best applications that provide locational benefits.
- S9. Advance technologies and strategies that optimize the benefits of plug-in electric vehicles to the electricity system.

Cross cutting

- S10. Leverage California's regional innovation clusters to accelerate the deployment of early-stage technologies and companies.
- S11. Cost share for federal awards.



Technology Demonstration and Deployment

Proposed Three-Year CEC EPIC Budget Plan (2012 - 2014):

Funding Area	Amount (Millions)
Emerging energy efficiency and demand-side management (S12)	\$37.3
Emerging clean energy generation technologies and deployment strategies (S13), including \$27 million for bioenergy.	\$48.0
Energy smart community demonstrations (S14)	\$44.5
Federal cost share (S15)	Up to 10%
Technology Demonstration and Deployment Program Area Total	\$129.8



Market Facilitation

Proposed Three-Year CEC EPIC Budget Plan (2012 - 2014):

Funding Area	Amount (Millions)
Regulatory Assistance and Streamlining (S16)	\$23.3
Clean Energy Workforce Development (S17)	\$4.5
Market Assessment, Program Evaluation, and Stakeholder Outreach (S18)	\$15.5
Market Facilitation Program Area Total	\$43.3



New Solar Homes Partnership

- CPUC EPIC Phase 2 decision indicates support for EPIC funds for NSHP.
- Staff final EPIC investment plan proposes collection of \$50 million for the NSHP from 2013-2014.
- Total NSHP funding capped at \$400 million.

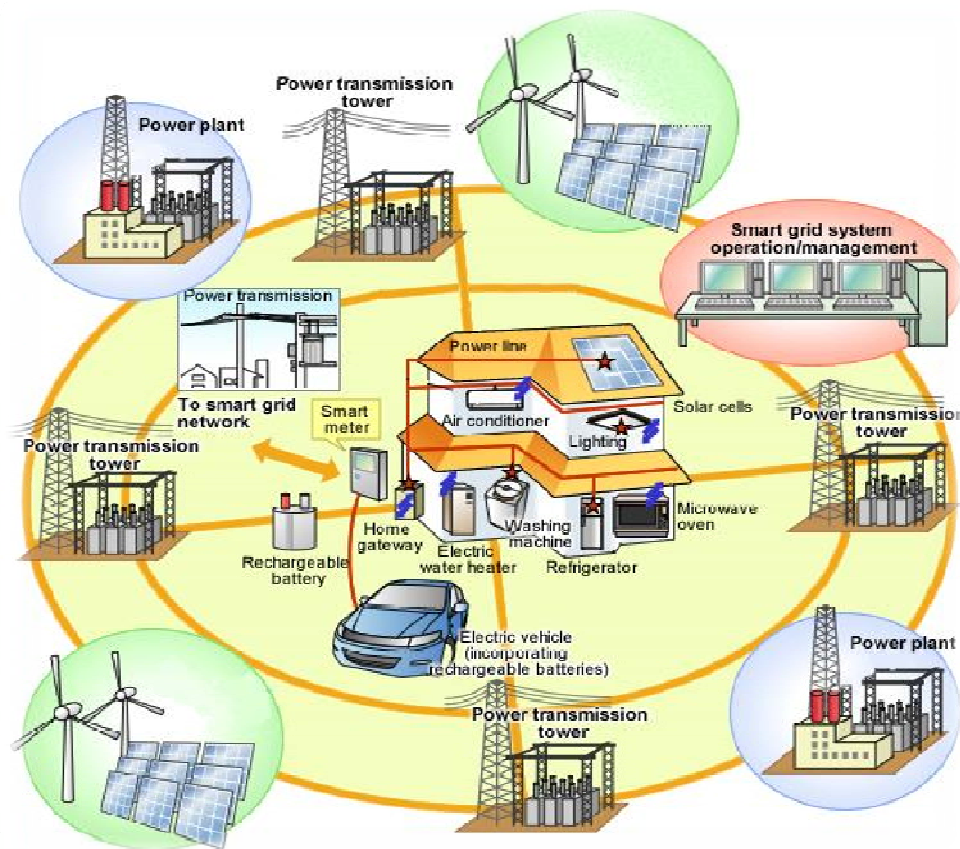


Source: NSHP program participant, single-family affordable housing
Photo courtesy of Habitat for Humanity, East Bay, (Oakland, CA).



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The Electric System is Transformed and Ratepayers Enjoy the Benefits





Next Steps

- Staff seeks adoption of the staff final EPIC investment plan as changed by the errata.
- If the plan is adopted, staff will submit the commission final investment plan to CPUC.
- CPUC proceeding.
- CPUC decision expected in May 2013.
- Implementation of investment plans.